LAMPIRAN

1.1 Hasil Perhitungan Pengujian Alat

1.1.1 Persentase Rendemen

% Rendemen = $\frac{massa\ minyak\ yang\ terekstrak\ (gr)}{massa\ sampel\ (gr)} \times 100\%$

Variabel 1 = $\frac{87{,}0688\ gr}{250\ gr} \times 100\%$ = 34,8275 %

Variabel 2 = $\frac{103{,}1140\ gr}{250\ gr} \times 100\%$ = 41,2456 %

Variabel 3 = $\frac{116{,}2596\ gr}{250\ gr} \times 100\%$ = 46,5038 %

Variabel 4 = $\frac{137{,}5920\ gr}{250\ gr} \times 100\%$ = 55,0368 %

Variabel 5 = $\frac{144{,}3096\ gr}{250\ gr} \times 100\%$ = 57,7238 %

Variabel 6 = $\frac{90{,}8544\ gr}{250\ gr} \times 100\%$ = 45,917%

Variabel 7 = $\frac{90{,}8544\ gr}{250\ gr} \times 100\%$ = 33,6099 %

Variabel 8 = $\frac{90{,}4137\ gr}{250\ gr} \times 100\%$ = 36,1654 %

Variabel 9 = $\frac{99{,}6170\ gr}{250\ gr} \times 100\%$ = 40,8468 %

Variabel 10 = $\frac{144{,}6628\ gr}{250\ gr} \times 100\%$ = 45,8651 %

Variabel 11 = $\frac{126{,}5606\ gr}{250\ gr} \times 100\%$ = 50,6242 %

Variabel 12 = $\frac{126{,}5606\ gr}{250\ gr} \times 100\%$ = 39,1788%

Pembanding = $\frac{68{,}194\ gr}{250\ gr} \times 100\%$ = 27,2776 %

1.1.2 Angka Asam Minyak Kelapa

Rumus = $\frac{56{,}1 \times ml\ KOH\ yang\ dibutuhkan \times normalitas\ KOH}{massa\ sampel\ (gr)}$

Massa sampel = densitas x volume minyak yang digunakan

Variabel 1 = $\frac{56{,}1 \times 0{,}3\ ml \times 0{,}1\ N}{4{,}716\ gr}$ = 0,598

Variabel 2 = $\frac{56{,}1 \times 0{,}4\ ml \times 0{,}1\ N}{9{,}718\ gr}$ = 0,475

Variabel 3 = $\frac{56{,}1 \times 0{,}5\ ml \times 0{,}1\ N}{4{,}726\ gr}$ = 0,593

Variabel 4 = $\frac{56{,}1 \times 0{,}8\ ml \times 0{,}1\ N}{9{,}730\ gr}$ = 0,948

Variabel 5 = $\frac{56{,}1 \times 1\ ml \times 0{,}1\ N}{4{,}732\ gr}$ = 1,185

Variabel 6 = $\frac{56{,}1 \times 0{,}52\ ml \times 0{,}1\ N}{4{,}738\ gr}$ = 0,178

Variabel 7 = $\frac{56{,}1 \times 0{,}33\ ml \times 0{,}1\ N}{4{,}738\ gr}$ = 0,356

Variabel 8 = $\frac{56{,}1 \times 0{,}54 \times 0{,}1\ N}{4{,}770\ gr}$ = 0,672

Variabel 9 = $\frac{56{,}1 \times 0{,}59\ ml \times 0{,}1\ N}{4{,}795\ gr}$ = 0,783

Variabel 10 = $\frac{56{,}1 \times 0{,}82\ ml \times 0{,}1\ N}{4{,}740\ gr}$ = 0,997

Variabel 11 = $\frac{56{,}1 \times 1{,}2\ ml \times 0{,}1\ N}{4{,}743\ gr}$ = 1,27

Variabel 12 = $\frac{56{,}1 \times 10{,}78\ ml \times 0{,}1\ N}{4{,}743\ gr}$ = 0,789

Pembanding = $\frac{56{,}1 \times 0{,}7ml \times 0{,}1\ N}{4{,}716\ gr}$ =0,836

1.1.3 Angka Penyabunan Minyak kelapa

Rumus = $\frac{(titrasi\ blanko - titrasi\ sampel) ml \times 28{,}05}{massa\ sampel\ (gr)}$

Variabel 1 = $\frac{(44{,}37 - 0{,}67)\ ml\ X\ 28{,}05}{4{,}716\ gr}$ = 259,456

Variabel 2 = $\frac{(44{,}37 - 0{,}7)\ ml\ X\ 28{,}05}{4{,}718\ gr}$ = 258,973

Variabel 3 = $\frac{(44{,}37 - 0{,}85)\ ml\ X\ 28{,}05}{4{,}726\ gr}$ = 258,598

Variabel 4 = $\frac{(44{,}37 - 0{,}97)\ ml\ X\ 28{,}05}{4{,}73\ gr}$ = 257,907

Variabel 5 = $\frac{(44{,}37 - 1{,}57)\ ml\ X\ 28{,}05}{4{,}732\ gr}$ = 255,578

Variabel 6 = $\frac{(44{,}37 - 0{,}789)\ ml\ X\ 28{,}05}{4{,}716\ gr}$ = 258,989

Variabel 7 = $\frac{(44{,}37 - 1{,}4)\ ml\ X\ 28{,}05}{4{,}716\ gr}$ = 259,176

Variabel 8 = $\frac{(44{,}37 - 0{,}99)\ ml\ X\ 28{,}05}{4{,}718\ gr}$ = 259,069

Variabel 9 = $\frac{(44{,}37 - 0{,}8)\ ml\ X\ 28{,}05}{4{,}726\ gr}$ = 258,797

Variabel 10 = $\frac{(44{,}37 - 0{,}7)\ ml\ X\ 28{,}05}{4{,}730\ gr}$ = 257,550

Variabel 11 = $\frac{(44{,}37 - 0{,}6)\ ml\ X\ 28{,}05}{4{,}732\ gr}$ = 255,117

Variabel 12 = $\frac{(44{,}37 - 0{,}569)\ ml\ X\ 28{,}05}{4{,}732\ gr}$ = 258,198

Pembanding = $\frac{(44{,}37 - 0{,}7)\ ml\ X\ 28{,}05}{4{,}16\ gr}$ = 259,472

1.2 Persen Penyimpangan

1.2.1 Pengaruh Waktu Terhadap Rendemen

Y= 0,3973x + 27,2

Variabel 1

pada saat x =20

Y_{teori} = 0,3973 (20) + 27,2 = 35,142

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{35,142-34,8275}{35,142} x\ 100\ \%$ = 0,8949 %

Variabel 2

x= 35

Y_{teori} = 0,3973 (35) + 27,2 = 3412

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{41,1055-41,2456}{41,1055} x\ 100\ \%$ = 0,3412 %

Variabel 3

x=50

Y_{teori} = 0,3973 (50) + 27,2 = 47,065

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{47,065-46,5038}{47,065} x\ 100\ \%$ = 1,1923 %

Variabel 4

X=65

Y_{teori} = 0,3973 (65) + 27,2 =52,7905

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{52,7905-55,0368}{52,7905} x\ 100\ \%$ = 4,255 %

Variabel 5

X=80

Y_{teori} = 0,3973 (80) + 27,2 = 58,696

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{58,696-57,7238}{58,697} x\ 100\ \%$ = 0,0165 %

Variabel 6

X=80

Y_{teori} = 0,3973 (95) + 27,2 = 57,8966

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{57,8966-45,876}{57,8966} x\ 100\ \%$ = 5,783 %

1.2.2 Penyimpangan Rendemen terhadap Tekanan

Variabel 7

x=100

Y_{teori} = 0,4373 (100) – 11,252 = 32,478

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{32,478-33,6099}{32,478} x\ 100\ \%$ = 0,348 %

Variabel 8

x=110

Y_{teori} = 0,4373 (110) – 11,252 = 36,851

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{36,851-36,1654}{36,851} x\ 100\ \%$ = 0,186%

Variabel 9

x=120

Y_{teori} = 0,4373 (120) – 11,252 = 41,224

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{41,224-39,8468}{41,224} x\ 100\ \%$ = 3,340%

Variabel 10

X=130

Y_{teori} = 0,4373 (130) – 11,252 = 45,597

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{45,597-45,8651}{45,597} x\ 100\ \%$ = 0,0587%

Variabel 11

x=140

Y_{teori} = 0,4373 (140) – 11,252 = 49,97

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{49,97-50,6242}{49,97} x\ 100\ \%$ = 1,309%

Variabel 12

x=140

Y_{teori} = 0,4373 (150) – 11,252 = 46,945

% kesalahan = $\frac{\%teori-\%percobaan}{\%teori} x\ 100\ \%$

% kesalahan = $\frac{46,945-45,987}{46,945} x\ 100\ \%$ = 3,378%

1.2 Lampiran Foto

Run	**Waktu (Menit)**	**Tekanan (kg/cm^2)**	**Gambar Minyak**
1	20	120	
2	35	120	
3	50	120	

4	65	120	
5	80	120	
6	10	100	
7	10	110	

8	10	120	
9	10	130	
10	10	140	
Pembanding	50	120	

1.3 Lampiran Foto Praktikum

 Proses Pengeringan Kelapa	 Kopra Setelah dikeringkan
 Kopra Setelah Mengalami Perajangan	 Kopra sebelum mengalami pengepresan
 Proses Pengambilan Minyak dengan Press Hidraulic	 Proses Pengepresan

 Proses Pengambilan Minyak	 Alat Mesin Press
 Bungkil Kelapa	 Bungkil Kelapa

1.4 Lampiran Foto Analisa

Run	Angka Asam		Angka Penyabunan	
	Sebelum	Sesudah	Sebelum	Sesudah
1.				
2.				
3.				

4.				
5.				
6.				
7.				
8.				

9.				
10.				
Pemban- **ding**